

*Imperial*  
*DEPARTMENT OF AGRICULTURE*  
*FOR THE WEST INDIES.*



---

**REPORT**  
ON THE WORK OF  
THE GOVERNMENT LABORATORY  
AND OFFICE OF THE  
SUPERINTENDENT OF AGRICULTURE  
FOR THE  
LEEWARD ISLANDS.

1911-12.

---

BARBADOS :  
ISSUED BY THE IMPERIAL COMMISSIONER OF AGRICULTURE  
FOR THE WEST INDIES.

---

1912.

---

[Price Threepence.]



# REPORTS

ON THE

## BOTANIC STATION, ECONOMIC PLOTS AND AGRICULTURAL EDUCATION, ANTIGUA.

---

Annual Reports on certain Economic Experiments conducted in connexion with the Botanic Station, 1900-2.

Annual Reports on the Botanic Station for the years 1901 and 1902.

Annual Reports on the Botanic Station, Economic Experiments and Agricultural Education for the years 1902-11.

---

## SUGAR-CANE EXPERIMENTS.

---

### IN BARBADOS.

Report of the Agricultural Work for 1900 :—  
Manurial Experiments and Experiments with varieties of Sugar-cane.

Report of the Agricultural Work for the seasons 1899-1901 to 1908-10.  
Parts I and II ; Manurial Experiments. Part III ; Varieties of Sugar-cane.

### IN THE LEEWARD ISLANDS.

Report on Experiments conducted with Sugar-canes in the season 1899-1900.

Reports on Experiments conducted with Sugar-canes in the seasons 1900-1 to 1909-10.

Part I ; Varieties of Sugar-cane. Part II ; Manurial Experiments.

Sugar-cane Experiments in the Leeward Islands, 1910-11.

Parts I and II published together in Royal 8vo.



*IMPERIAL*  
*DEPARTMENT OF AGRICULTURE*  
*FOR THE WEST INDIES.*



---

**REPORT**  
ON THE WORK OF  
**THE GOVERNMENT LABORATORY**  
AND OFFICE OF THE  
**SUPERINTENDENT OF AGRICULTURE**  
FOR THE  
**LEEWARD ISLANDS.**  
**1911-12**

---

BARBADOS :  
ISSUED BY THE IMPERIAL COMMISSIONER OF AGRICULTURE  
FOR THE WEST INDIES.

---

1912.

---

[Price Threepence.]





# LETTER OF TRANSMITTAL

*Commissioner of Agriculture—to Colonial Secretary, Antigua.*

Barbados,

No. A. 3,608

December 6, 1912.

Sir,

I have the honour to forward a Report on the Work of the Government Laboratory and Office of the Superintendent of Agriculture for the Leeward Islands for the year 1911-12.

2. As is indicated by the Superintendent of Agriculture, in forwarding the manuscript, this is the first occasion on which such a report has been presented in this form. He states, further: 'The scope of the report serves to indicate the various directions in which the activities of the office have continued to be exercised during the year. It does not in any sense aim at affording anything but the most general information on the character of the results achieved. In many instances these have formed the subject of separate reports and papers published elsewhere.'

3. The report should serve to illustrate the fact that the existence of the Government Laboratory for the Leeward Islands, with its staff, puts that Colony in possession of an efficient centre where the work and knowledge of trained scientists are available for employment by all the islands alike. The many-sided character of this work, alone, renders the possession of such an institution of the greatest importance to agriculturists and others in the Colony.

4. The varied nature of the contents of the report prevents attention to all of them, in a short review. Among the outstanding features there appears the list of samples analysed, which shows how the activities of the Laboratory are pursued in many diverse, useful directions. Other important sections deal with the functions of the Office of Superintendent of Agriculture and of the Laboratory and with the reports and papers prepared during the year under review. Mention is made by the Superintendent of Agriculture of the usefulness of availability of the Laboratory for toxicological work in checking crime of certain types in the Colony, and I am able to endorse his opinion through personal experience.

5. It is evident that not the least among the functions of this Officer and the institution under his charge is the very useful work of organization and co-ordination of agricultural investigation in the different islands, and this has shown itself to have been particularly efficient in relation to the experiments conducted with the staple crops of several of the islands. In issuing the Report, it is hoped that it will fulfil the intention of its publication, namely that it will serve as a means of explaining and illustrating the duties and functions of the Office of Superintendent of Agriculture for the Leeward Islands—matters that have not often received definition for the public in the past.

(Sgd.) FRANCIS WATTS,

Commissioner of Agriculture  
for the West Indies.





# Report on the Work of the Government Laboratory and Office of the Superintendent of Agriculture for the Leeward Islands,

For the Year ended March 31, 1912.

## COST OF UPKEEP.

The expenditure incurred during the year was as follows:—

|                                                                        |     |     |     |     | £     | s. | d. |
|------------------------------------------------------------------------|-----|-----|-----|-----|-------|----|----|
| From local funds:—                                                     |     |     |     |     |       |    |    |
| Personal emoluments                                                    | ... | ... | ... | ... | 379   | 11 | 3  |
| Other charges                                                          | ... | ... | ... | ... | 163   | 6  | 6  |
| Total                                                                  | ... | ... | ... | ... | 542   | 17 | 9  |
| From Imperial funds:—                                                  |     |     |     |     |       |    |    |
| Personal emoluments                                                    | ... | ... | ... | ... | 527   | 13 | 4  |
| Other charges                                                          | ... | ... | ... | ... | 62    | 6  | 8  |
| Total                                                                  | ... | ... | ... | ... | 590   | 0  | 0  |
| Total from local and Imperial funds                                    | ... |     |     |     | 1,132 | 17 | 9  |
| Special services from<br>lapsed balances of Imperial<br>grant-in-aid:— | ... | ... | ... | ... | 237   | 14 | 5  |
| Total expenditure                                                      | ... | ... | ... | ... | 1,370 | 12 | 2  |
| The receipts were as follows:—                                         |     |     |     |     |       |    |    |
| Analyst's fees                                                         | ... | ... | ... | ... | 8     | 3  | 0  |

## STAFF CHANGES.

The junior assistant, Mr. J. L. E. R. Lake, proceeded on leave of absence for three months on October 29, 1911; at the end of that time he resigned his post to pursue a course of study at McGill University, Montreal, and Mr. R. E. Kelsick was appointed to fill his place as and from January 1, 1912. During Mr. Lake's leave, arrangements were made for the discharge of his duties departmentally.

## CADETSHIPS.

The cadetship attached to the Laboratory was filled by Arnold Gallwey from August 31, 1911. The scope and object of this cadetship and that attached to the Botanic Station, Antigua, are explained in the paper on the Cadet System in Antigua and St. Kitts, published in the *West Indian Bulletin*, Vol. XII, p. 20.



## ADDITIONS TO EQUIPMENT.

During the year, the equipment of the Department has been increased by the purchase from lapsed balances of the Imperial grant-in-aid of the Laboratory of a 4 h.p. Hornsby-Ackroyd oil engine and a small horizontal Chattanooga cane mill for use in connexion with the cane equipments; the mill has been erected at the Botanic Station, Antigua. This addition to the equipment has considerably increased the facilities existing for the study of various problems connected with the cane industry.

Plans were also formulated for the improvement of the equipment of the Laboratory by the installation of a petrol gas-making plant and the construction of new work benches. The work of carrying out these alterations is now in progress and may be expected to result in a considerable improvement in working conditions when completed. The cost of the gas machine and of the materials for the new benches has also been provided from lapsed balances of the Imperial grant-in-aid of the Laboratory. Sums of money were also appropriated during the year for Special Services from the lapsed balances of the Imperial grant-in-aid, with the sanction of the Secretary of State, for the following purposes:—

The binding of sets of the publications of the Imperial Department of Agriculture for the Public Libraries throughout the Colony. The provision of grants-in-aid of the teaching of Science at the Grammar Schools in Antigua, Dominica, and St. Kitts. The payment of the expenses incurred in connexion with the visit of the Superintendent of Agriculture and the Curator of the Botanic Station, Antigua, as delegates to the Agricultural Conference, Trinidad. Expenses in connexion with the printing of reports on sugar-cane experiments.

## SAMPLES ANALYSED.

In relation to the general analytical work of the Laboratory, the following is a summary of the samples examined during the year:—

|                                                     |     |     |     |
|-----------------------------------------------------|-----|-----|-----|
| Cane juices (sugar-cane experiments)                | ... | ... | 898 |
| Cane juices (estates)                               | ... | ... | 68  |
| Sugars and molasses (commercial polariscopic tests) | ... | ... | 29  |
| Sugars and molasses (other samples)                 | ... | ... | 16  |
| Massecuite (complete analyses)                      | ... | ... | 4   |
| Massecuite (physical analyses)                      | ... | ... | 2   |
| Megass                                              | ... | ... | 3   |
| Filter press cake                                   | ... | ... | 9   |
| Furnace gases                                       | ... | ... | 3   |
| Water                                               | ... | ... | 53  |
| Kerosene                                            | ... | ... | 103 |
| Rubber                                              | ... | ... | 6   |
| Insecticides                                        | ... | ... | 6   |
| Milk                                                | ... | ... | 4   |
| Manures                                             | ... | ... | 3   |
| Soils, sands and marls (calcium carbonate content)  | ... | ... | 6   |
| Soils for sodium chloride                           | ... | ... | 2   |
| Material taken in cases of suspected poisoning      | ... | ... | 4   |
| Soils, complete analyses, physical and chemical     | ... | ... | 15  |
| Cottons                                             | ... | ... | 27  |
| Miscellaneous                                       | ... | ... | 5   |
| Special investigations                              | ... | ... | 4   |

1,270

Samples in relation to the sugar industry constitute by far the largest number in the above list; in connexion with the sugar-cane experiments 898 juices were analysed. Of these 654 came from Antigua and 244 from St. Kitts and Nevis. In this connexion a small branch laboratory is maintained at La Guérite, St. Kitts, and during the reaping season the Assistant Chemist proceeded to St. Kitts for the purpose of performing the analytical operations in relation to the experiments. Advantage is usually taken of these visits to render what assistance may be possible in the way of free analyses of juices and other sugar-house products for planters in that Presidency. In other directions



a considerable amount of analytical work has been performed with a view to assisting planters in case of difficulty, and throwing light on obscure points. Following the policy adopted in relation to the Laboratory in the past, no charges have been made in many cases for assistance so rendered. The samples analysed in this connexion have included juices, sugars, massecuites, molasses, megass, filter cake and waste furnace gases.

Of the fifty-three samples of water the majority were taken in conjunction with the Country Health Board of Antigua in a systematic examination of the quality of the various sources of water-supply of that Presidency. The results have been reported to the Government and will also be published in the *West Indian Bulletin*. Samples from the Virgin Islands and Montserrat were also examined.

The 103 kerosene oil samples were tested for flash point in connexion with the Leeward Islands Act No. 9 of 1889, which requires that all kerosene imported into the Colony should possess a flash point above 83°F.

The six samples of rubber were analysed completely in connexion with the experiments in rubber-growing in progress in Dominica.

The six samples of insecticides examined consisted of samples of Paris green and London purple for use in connexion with cotton-growing; they were derived from Antigua, St. Kitts, Nevis and Montserrat.

Of the four samples of materials taken in cases of suspected poisoning, one consisted of viscera from a woman who died from drinking a strong solution of corrosive sublimate, in mistake for water. In consequence of this accident a leaflet dealing with precautions to be observed in the storage of such material as corrosive sublimate and Paris green and steps to be taken in cases of poisoning by them, was prepared by the Government Chemist, in consultation with the Chief Government Medical Officer of Antigua, at the request of the Government, and circulated throughout the Colony (see *Agricultural News*, Vol. X, p. 361).

Of the other cases, in one instance Paris green was found to be present in a small sample of sand taken from the bottom of a shallow well. In the second mercuric iodide was found to have been added to a piece of bread. In the last case no poisonous substance was found.

Of the above four samples, two came from Antigua, one from Montserrat, and one from St. Kitts-Nevis.

In the experience of the writer, extending over a period of nine and a half years, the existence of the Laboratory serves as an effective check on crime of this type in the Leeward Islands Colony.

Complete chemical and physical analyses of fifteen samples of soil were carried out during the year. These consisted almost entirely of samples from Antigua and formed part of the systematic soil survey of that island now in progress on lines similar to investigations already carried out in relation to Dominica, Montserrat, and Nevis, the results of which have already been published. Work of this description is very laborious, and involves the devotion of much time and care to its successful prosecution.

The samples of cotton mainly consisted of the product of plants chosen in the course of the usual selection trials carried out at the experiment station, Skerretts, Antigua, and of a number of second and third generation hybrids obtained in the course of hybridization experiments. In the earlier year of the cotton industry, the whole of the work of the examination of the samples of lint obtained in the cotton selection experiment in the various Presidencies was performed at the Laboratory. In subsequent years the various agricultural officers in islands other than Antigua have been instructed in the method of examining cottons, and the work of judging the lints is now carried out by them.

Special investigations were carried out on the chemical and physical properties of lime oils, the determination of the moisture contents and investigation of the average composition of molasses, the composition of lime fruits and the control of the work of lime mills with a view to the improvement of the extraction. The two former investigations involved the detailed examination



of a considerable number of samples of limes and lime products from Dominica and Montserrat, while the latter entailed the analysis of a considerable number of samples of molasses from Antigua, St. Kitts and Nevis. In addition some work was also performed on the refractive indices of solutions of citric acid.

These involved the performance of a considerable amount of analytical work and the devotion of time and consideration to the working out of methods of analysis in relation to the various problems.

The results of these investigations were in the majority of cases submitted to the Agricultural Conference held in Trinidad in January 1912.

---

### PATENT SPECIFICATIONS.

The Government Chemist and Superintendent of Agriculture was during the year appointed as Examiner to report on two applications for letters patent in the Colony in connexion with inventions having a chemical bearing, under the Patents Act No. 3 of 1906. The fees received on this account were paid into the Treasury.

He was also called upon to advise the Government in connexion with matters possessing a chemical application, on several occasions.

---

### METEOROLOGICAL SERVICE.

In accordance with custom the meteorological service maintained by the Department has been systematically carried on throughout the year at the Laboratory and the Botanic Station, Antigua. The data are published in the *Official Gazette*, and include a weekly meteorological register and an annual summary of the meteorological readings for the year.

In accordance with the usual practice, a summary of the rainfall for the island of Antigua during the year 1911 was compiled from the returns of the readings kept on estates throughout the island, and the results published in the *Official Gazette*.

The meteorological service maintained in this way is purely voluntary in character, but it fulfils a useful purpose. Arrangements exist in connexion with it for the issuing of public warnings of the approach of cyclonic disturbances, in order to permit of timely notification being afforded as far as possible of the likelihood of danger in this respect.

---

### SUGAR-CANE EXPERIMENTS.

Work in connexion with the sugar-cane experiments has occupied a considerable share of the time of the staff of the Laboratory. The experiments are conducted under the direction of the Government Chemist and Superintendent of Agriculture. Apart from actual analytical operations, the compilation of the results and preparation of the annual report involve much labour. In addition to those from nearly 900 variety plots, the results from 400 manurial plots were also reported on; from these no juices are analysed but the work in connexion with the compilation of the results from these experiments is also performed at the Laboratory.

---

### EXPERIMENTS WITH OTHER CROPS.

In relation to other crops, series of manurial experiments are also carried out in Dominica with cacao, and in St. Kitts and Montserrat with cotton; experiments are each year performed on systematic lines by the agricultural officers in those Presidencies.



The experiments were laid out under the direction of the Laboratory in the first instance, and the results from them are submitted each year to the Laboratory for compilation and report. During the year results obtained in this way have as usual been reported on.

---

### INVESTIGATIONS IN RELATION TO DISEASES OF CROPS.

Investigation of a number of points in connexion with pests and diseases of crops at various places were made during the year. Among these may be mentioned specially: (1) a detailed investigation of the occurrence of root disease of sugar-cane in Antigua, undertaken in conjunction with Mr. F. W. South, B.A., Mycologist to the Imperial Department of Agriculture. The results of this investigation were published in a special report on the subject issued by the Commissioner of Agriculture and circulated widely among planters. (2) The investigation of a new pest of canes in Antigua in the shape of the larva of a hard-back beetle which attacks the pieces of cane used for planting material. In addition to these a number of other cases were also investigated.

---

### FUNCTIONS OF THE OFFICE OF THE SUPERINTENDENT OF AGRICULTURE.

The functions and duties of the office of Superintendent of Agriculture are not at the present time clearly defined. Under the arrangements existing at present he is placed in administrative control of the Botanic and Experiment Station, Antigua, and the operations of that institution are carried out under his general direction. This, however, does not apply to other Presidencies, where as at present exercised, the functions of the office are of a general advisory and consultative character. During the year these functions have continued to be exercised on the above lines; details of the work of the Antigua Botanic Station are supplied in the special report by the Curator of that institution.

---

### VISITS TO PRESIDENCIES.

Visits were paid by the Superintendent of Agriculture to every Presidency of the Colony. On each occasion inspections were made at the Botanic and Experiment Stations and visits and tours of inspection made to the different districts. After each visit detailed reports were submitted to the Commissioner of Agriculture, and copies forwarded to the Colonial Secretary. In the course of this part of the work eighty-five visits were paid to estates, and in Dominica and the Virgin Islands tours of a number of days' duration were made to the out-districts.

The occasion of these visits affords opportunity for discussion of many points of departmental duty and agricultural interest with the local agricultural officers. Moreover it forms a means of bringing to notice developments of importance which may from time to time take place, of investigating and discussing diseases and pests of crops, and directing attention to points requiring investigation in the Laboratory.

Conversely the Laboratory forms a nucleus for the Colony from which new lines of investigation in a measure proceed.

---

### FUNCTIONS OF THE LABORATORY.

It has during the past six years been an important function of the Laboratory to work out simple methods of examination of agricultural products, which can be put into the hands of the workers at the various experiment stations, with a view to assisting planters. In the past, in this way, methods have been devised for enabling simple examinations to be made of soils, cottons and

lime juices, and the agricultural officers in certain islands instructed in the manner of working them. During the past year simple methods of controlling the work of lime mills by examination of the squeezed skins have been devised on similar lines, and the Assistant Curator of the Botanic Station, Dominica, and the Curator of the Botanic Station, Montserrat, instructed therein. A simple method of testing bay oils has also been devised, and instruction in it given to the Curator of the Botanic Station, Montserrat.

At the Botanic Station, Montserrat, a small workroom was constructed during the year for the purpose of carrying out such operations as are indicated above; this was designed and equipped in consultation with, and subject to the advice of, the Superintendent of Agriculture. This is following the similar course adopted in Dominica, three years ago, when the equipment of the office at the Botanic Station was increased by the provision of a quantity of chemical apparatus and the assistant Curator instructed in methods of performing simple tests of lime juice.

---

### WEST INDIAN AGRICULTURAL CONFERENCE.

The Government Chemist and Superintendent of Agriculture attended the West Indian Agricultural Conference held in Trinidad in January 1912, as one of the official representatives of the Colony.

Subsequently Mr. J. W. McConnel, official delegate of the British Cotton Growing Association to the Conference, paid a visit to the Leeward Islands and devoted much time to the study of conditions attending the cultivation of Sea Island cotton. Every effort was made to render Mr. McConnel's visit as useful as possible.

---

### REPORTS AND PAPERS PREPARED.

During the year the following reports and papers were prepared for publication :—

Report on Sugar-cane Experiments in Antigua and St. Kitts, Parts I and II.

Report on Cacao Manurial Experiments, Dominica. (Report on the Agricultural Department, Dominica, 1911-12.)

Report on the Cotton Manurial Experiments, St. Kitts.

The Water Content of Molasses—with Mr. V. M. Weil, B.Sc., Assistant Chemist. (*West Indian Bulletin*, Vol. XII, p. 89.)

The Work of Lime Mills. (*West Indian Bulletin*, Vol. XII, p. 473.)

Some Notes on Essential Oils of Lime—with Mr. N. Greenhalgh, B.Sc. (*West Indian Bulletin*, Vol. XII, p. 498.)

The Water-supply of Antigua. (*West Indian Bulletin*, Vol. XII, p. 530.)

A Note on Soil Shrinkage. (*West Indian Bulletin*, Vol. XII, p. 66.)

Summary of the work in connexion with Sugar-cane Experiments.

Summary of the Progress of the Sugar Industry in Antigua and St. Kitts—with Mr. F. R. Shepherd. (*West Indian Bulletin*, Vol. XII, p. 394.)

Summary of the Progress of the Cotton Industry in the Leeward Islands—with the assistance of the agricultural officers in the different Presidencies. (*West Indian Bulletin*, Vol. XIII, p. 11.)

A Note on the Lime Industry of Antigua—with Mr. T. Jackson. (*West Indian Bulletin*, Vol. XII, p. 504.)

A Note on the Coco-nut Industry of Antigua—with Mr. T. Jackson. (*West Indian Bulletin*, Vol. XII, p. 563.)



A Report on the Prevalence of Root Disease of Sugar-cane in Antigua—with Mr. F. W. South, B.A.

A Note on Rubber-growing in the Drier West Indian Islands. (*West Indian Bulletin*, Vol. XII, p. 13.)

A Note on the Cadet System in Antigua and St. Kitts—with Mr. F. R. Shepherd and Mr. T. Jackson. (*West Indian Bulletin*, Vol. XII, p. 20.)

Meteorological register and rainfall returns for Antigua for 1911. (Report on the Agricultural Department, Antigua, 1911-12.)

In addition a general review of agricultural conditions in the Colony during the year 1910-11 was prepared for insertion in the Annual Report on the Blue Book, at the request of the Acting Colonial Secretary; while a special report on the subject of reafforesting the area surrounding Wallings reservoir, Antigua, was prepared at the request of His Excellency Sir E. B. Sweet Escott, K.C.M.G.

During the year a descriptive handbook of Antigua, prepared by the writer at the request of His Excellency Sir E. B. Sweet Escott, K.C.M.G., was published by the Government of Antigua.

---

### CORRESPONDENCE.

In the year under review 1,503 letters were despatched, 1,101 letters received, and 301 minute papers attended to.

---

### PUBLICATIONS RECEIVED.

Publications from agricultural institutions in various parts of the world have been regularly received and filed, and acknowledgment is here made to the various sources from which they are sent. The Department possesses a large and valuable library of literature on agricultural subjects, to which additions are constantly being made.

---

### ITEMS OF DEPARTMENTAL INTEREST.

Copies of monthly items of departmental interest from the agricultural experiment stations of each Presidency have been furnished in duplicate to the Superintendent of Agriculture during the year, under the arrangement made by His Excellency Sir E. B. Sweet Escott, K.C.M.G., and one copy of each of these has been forwarded each month to the Colonial Secretary. A copy of each is sent by the various officers direct to the Office of the Commissioner of Agriculture; while a letter of comment on each is also forwarded to the same place by the Superintendent of Agriculture. By this system a close touch is readily maintained with conditions in each Presidency.

---

### AGRICULTURAL EXAMINATIONS.

The usual agricultural examinations instituted by the Imperial Department of Agriculture were held in Antigua during the year as follows:—

Preliminary,  
November 21, 1911.

Intermediate and Final,  
November 22, 1911.

The Government Chemist and Superintendent of Agriculture acted as presiding examiner in Antigua as on former occasions; in the oral examination he was assisted by Mr. T. Jackson, while Messrs. J. Roden and R. S. D. Goodwin



acted as planting examiners. In this connexion a series of lectures to candidates was delivered in Antigua during the months of July, August and September by the Superintendent of Agriculture, the Assistant Chemist and other members of the staff of the Agricultural Department.

During the month of February 1912 a special course of instruction in elementary methods of sugar analysis was also given at the Laboratory to the Cadets and Agricultural Assistants attached to the Agricultural Department in Antigua.

---

### **AGRICULTURAL EDUCATION AT THE ANTIGUA GRAMMAR SCHOOL.**

The Superintendent of Agriculture has continued during the year to advise in connexion with the agricultural teaching at the Antigua Grammar School.

---

### **PERMANENT EXHIBITIONS COMMITTEE.**

As in former years the Superintendent of Agriculture has also served as Chairman of the Permanent Exhibitions Committee of Antigua. A collection of exhibits of the produce of the island was forwarded to the Toronto Exhibition in July 1911; previous to its despatch the exhibits were displayed for public inspection at the room of the Agricultural and Commercial Society. In March 1911, a collection was also prepared and forwarded to the Imperial Institute.

---

### **CENTRAL FACTORIES BOARD.**

The duties of Chairman of the Central Factories Board, Antigua, have continued to be discharged by the Superintendent of Agriculture. This body is responsible for fixing the price to be paid for peasants' canes delivered at the sugar factories in Antigua under the contract whereby grants-in-aid of their construction were made by the Imperial Government in 1903. The findings of the Board are utilized by the factory authorities to fix the price for estates canes delivered at the Factories. During the present year an arrangement has been made whereby the findings of the Board are used in the same way to decide the prices to be paid for canes delivered at the newly erected St. Kitts (Basseterre) Sugar Factory.

---

### **AGRICULTURAL SOCIETIES]**

The Assistant Chemist has filled the office of Honorary Secretary to the Antigua Agricultural and Commercial Society throughout the year, and close touch has continued to be maintained between the Society and the Department. On several occasions addresses were delivered at meetings of the Society by the Superintendent of Agriculture. This officer also attended and addressed meetings of the Agricultural Societies of Dominica, St. Kitts and Montserrat during the year.

---

In the foregoing pages the attempt has been made to summarize briefly the various operations of the Government Laboratory for the Leeward Islands during the year 1911-12. The results of the various lines of work have been in many cases published in detail elsewhere and are in no case reproduced in this report. The activities of the office have been numerous and varied, but from its many-sided characters the full scope of its operations is perhaps somewhat difficult to grasp in its entirety. The present report has been prepared in order if possible to make clearer the character of the work and the functions of the office.

(Sgd.) H. A. TEMPANY,

Government Chemist and Superintendent of  
Agriculture for the Leeward Islands.





# Publications on Sale

## OF THE IMPERIAL DEPARTMENT OF AGRICULTURE

### FOR THE WEST INDIES.

#### The 'WEST INDIAN BULLETIN'. A Quarterly Scientific Journal

Volume I:—Full reports of the Agricultural Conferences of 1899 and 1900.

Only a very limited number of copies of the parts of Volume I are available, and these cannot be sold separately. Volume I, complete in original paper covers as issued, post free, 5s.

Volumes II, III, IV, V, VI and VII:—Price 2s. each. Post free, 2s. 8d.

Volume VIII, Nos. 1, 2 and 3:—West Indian Agricultural Conference, 1907; Abstract of Proceedings and Reprint of Papers. No. 4: Agricultural Conference, 1908; Presidential Address and Abstract of Proceedings. Price 6d. each number. Post free 8d.

Volume IX, Nos. 1, 2, 3 and 4:—Reprints of papers read at Agricultural Conference, 1908, with summaries of discussions following. Price 6d. each number. Post free, 8d.

Volume X, Nos. 1, 2, 3 and 4:—Papers on General Subjects. Antigua Agricultural Conference.

Volume XI, Nos. 1, 2, 3 and 4:—Papers on General Subjects. Account of Imperial Department of Agriculture in the West Indies.

Volume XII, Nos. 1, 2 and 3, No 4:—Containing Papers on PLANT DISEASES AND PESTS, COCOA NUT, LIME AND FRUIT, AND RICE INDUSTRIES, prepared for the recent Agricultural Conference, comprising, among others: The Use of Entomogenous Fungi on Scale Insects in Barbados; Further Notes on the Fungus Parasites of Scale insects; Report on the Prevalence of Some Pests and Diseases in the West Indies, for 1900 and 1911; Cocoa-nut Palm Insects in Trinidad; Some Fruit Diseases; Experiments in Lime Juice Concentration; Some Root Diseases of Permanent Crops in the West Indies; The Bay Rum and Bay Oil Industries of St. Thomas and St. Jan; The Classification of Sweet Potatoes; The Water-Supply of Antigua; Artificial Cross-Fertilization of the Mango; and Rice Experiments in British Guiana.

#### PAMPHLET SERIES.

The Pamphlets are written in a simple and popular manner, and the information contained in them is especially adapted to West Indian conditions. They contain, amongst other subjects, summaries of the results of the experiment work on sugar-cane and manures up to 1909-10, the full official reports of which have only a limited circulation. The number issued up to the present time is seventy-one. Those mentioned in the following list are still available; the rest are out of print:—

##### SUGAR INDUSTRY.

Seedling and other Canes at Barbados,  
in 1900, No. 3, price 2d.; in 1901, No. 13, Price 4d.  
in 1902, No. 19, price 4d.; in 1903, No. 26, Price 4d.  
in 1904, No. 32, price 4d.

Seedling Canes and Manurial Experiments at Barbados,  
in 1903-5, No. 40, price 6d.; in 1904-6, No. 41, price 6d.  
in 1905-7, No. 49, price 6d.; in 1906-8, No. 59, price 6d.  
in 1907-9, No. 62, price 6d.; in 1908-10 No. 63, price 6d.

Seedling and other Canes in the Leeward Islands,  
in 1900-1, No. 12, price 2d.; in 1901-2, No. 20, price 2d.  
in 1902-3, No. 27, price 2d.; in 1903-4, No. 33, price 4d.  
in 1904-5, No. 39, price 4d.; in 1905-6, No. 46, price 4d.  
in 1906-7, No. 50, price 4d.; in 1907-8, No. 56, price 4d.  
in 1908-9, No. 63, price 6d.; in 1909-10, No. 67, price 6d.

Manurial Experiments with Sugar-cane in the Leeward Islands,  
in 1902-3, No. 30, price 4d.; in 1903-4, No. 36, price 4d.  
in 1904-5, No. 42, price 4d.; in 1905-6, No. 47, price 4d.  
in 1906-7, No. 51, price 4d.; in 1907-8, No. 57, price 4d.  
in 1908-9, No. 64, price 4d.; in 1909-10, No. 68, price 4d.

##### SCALE INSECT.

Scale Insects of the Lesser Antilles, Part I, No. 7, price 4d. Part II., No. 22, price 4d

##### GENERAL.

- (5) General Treatment of Insect Pests (Revised), price 4d.
- (14) Screw Worm in Cattle at St. Lucia. Price 2d.
- (15) Plain Talk to Small Owners. Price 2d.
- (16) Hints on Onion Cultivation. Price 2d.
- (17) General Treatment of Fungoid Pests. Price 4d.
- (18) Recipes for Cooking West Indian Yams. Price 2d.
- (25) Ground Nuts in the West Indies. Price 2d.
- (28) Barbados and Porto Rico Molasses. Price 3d.
- (34) Notes on Rabbit Keeping in the West Indies. Price 2d.
- (35) Information in regard to Agricultural Banks. Price 5d.
- (27) Cultivation of Oranges in Dominica. Price 4d.
- (38) Cultivation and Curing of Tobacco. Price 4d.
- (41) Tobago, Hints to Settlers. Price 6d.
- (43) Cotton Seed and Cotton-cake-meal on West Indian Plantations. Price 2d.
- (45) A B C of Cotton Planting. New and Enlarged Edition. Price 6d.
- (54) Fungus Diseases of Cacao and Sanitation of Cacao Orchards. Price 4d.
- (55) Millions and Mosquitos. Price 3d.
- (58) Insect Pests of Cacao. Price 4d.
- (60) Cotton Gins. How to erect and work them. Price 4d.
- (61) The Grafting of Cacao. Price 4d.
- (65) Hints for School Gardens. Fourth Edition. Price 4d.
- (69) Hints to Settlers in St. Lucia. Price 6d.
- (70) Coco-nut Cultivation in the West Indies. Price 6d.
- (71) Insect Pests of the Lesser Antilles. Price 1s. 3d.

The above will be supplied post free for an additional charge of ½d. for the pamphlets marked, 2d., 1d. for those marked 4d., and 1½d. for Nos. 40, 41, 44, 45, 49, 59, 62, 63, 67, 69 and 70. The postage for No. 71 is 4d.





## AGRICULTURAL NEWS.

The Fortnightly Illustrated Review of the Imperial  
Department of Agriculture for the West Indies.

The first number of the *Agricultural News* was published on April 25, 1902. Subsequent numbers have regularly appeared, on every alternate Saturday, in time for the outgoing mails.

The *Agricultural News* has met with a cordial reception both in the West Indies, and in other parts of the world. The circulation is steadily increasing, and it appears to supply a long-felt want in furnishing agricultural information, plainly worded, and exactly suited to the requirements of these colonies.

THE GARDENERS' CHRONICLE states: 'The *Agricultural News*, the newly established Review of the Imperial Department of Agriculture for the West Indies, always good, improves as it goes on. It supplies to the planter just the kind of information he requires, and emphasizes the need of brain culture as a preliminary to practical work.'

THE JAMAICA EDUCATIONAL BULLETIN refers to the *Agricultural News* as: 'a valuable instrument in the uplifting of the West Indies—uplifting the several colonies into the view of one another, and into the view of the Mother Country and her markets and capitalists.'

Letters and matter for publication, as well as specimens for naming, should be addressed to the Commissioner, Imperial Department of Agriculture, Head Office, Barbados.

All applications for copies of the '*Agricultural News*' should be addressed to the Agents, and not to the Department. A complete list of the London and Local Agents is as follows:—

London: Messrs. DULAU & Co., 37, Soho Square, W.  
Barbados: Messrs. BOWEN & SONS, Bridgetown.  
Jamaica: THE EDUCATIONAL SUPPLY COMPANY, 16, King St., Kingston.  
British Guiana: THE 'DAILY CHRONICLE' OFFICE, Georgetown.  
Trinidad: Messrs. MUIR, MARSHALL & Co., Port-of-Spain.  
Tobago: Mr. C. L. PLAGEMANN, Scarborough.  
Grenada: 'THE STORES' (Grenada) Limited, St. George.  
St. Vincent: Mr. L. S. MOSELEY, Agricultural School.  
St. Lucia: Mr. M. A. LAWRENCE, Botanic Station.  
Dominica: Mr. J. R. H. BRIDGEWATER, Roseau.  
Montserrat: Mr. W. ROBSON, Botanic Station.  
Antigua: Mr. S. D. MALONE, St. John's.  
St. Kitts: THE BIBLE AND BOOK SUPPLY AGENCY, Basseterre.  
Nevis: Messrs. HOWELL BROS., Charlestown.

The price of the *Agricultural News* is 1d. per number, post free 2d. Annual subscription, payable to the agents, 2s. 2d., post free 4s. 4d. per annum. Vols. I-X complete, with title page and index, as issued—Price 5s. each, post free. Only a few copies available. The scale of charges for ADVERTISEMENTS may be obtained on application to the agents as above.